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(56) Documents Cited

GB 2311929 A GB 2263621 A  
CH 000686653 A IE 940000418 A  
SU 001734666 A US 6253382 A  
US 5911309 A US 4766612 A

(58) Field of Search

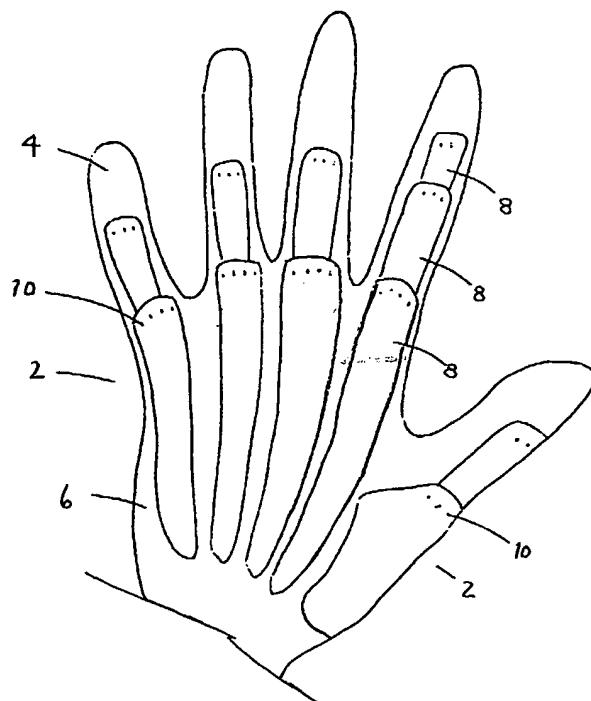
UK CL (Edition S ) A3V V1A1C1 V1A1C2 V60  
INT CL<sup>7</sup> A41D 13/08 19/015 31/00, A63B 71/14  
Other: Online: WPI, EPODOC, JAPIO

(54) Abstract Title

A protective sports glove

(57) A sports glove for protecting the hand for use in sports such as polo, baseball, hockey, cricket and other ball games, comprising a protective framework 2 substantially following the shape and position of the bones of a user's hand. The framework 2 is made up of a number of support plates 8, linked together with hinges 10. The support plates overlap other support plates, in a fish-scale effect. The support plates are made from shock-resistant or impact resistant material.

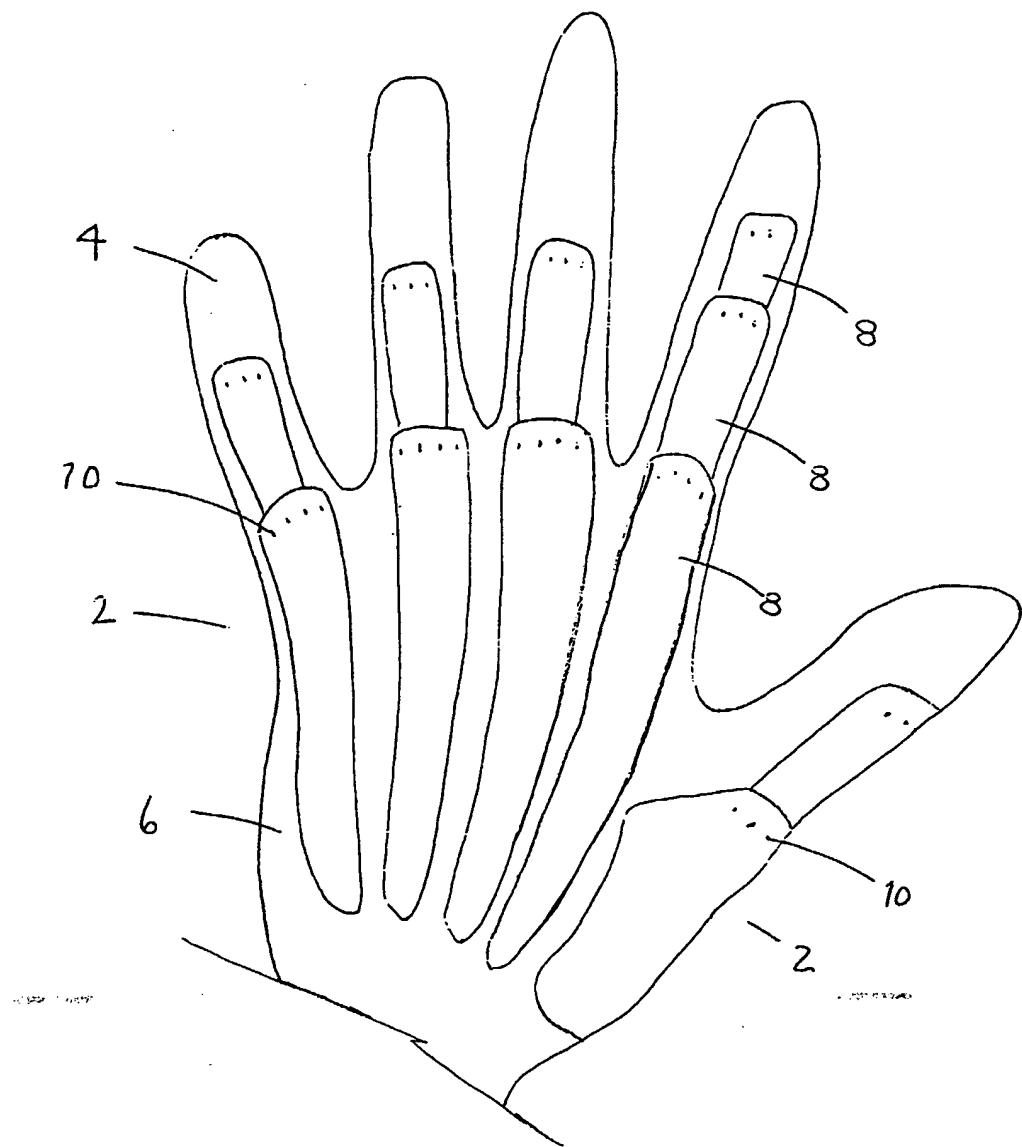
FIGURE 1



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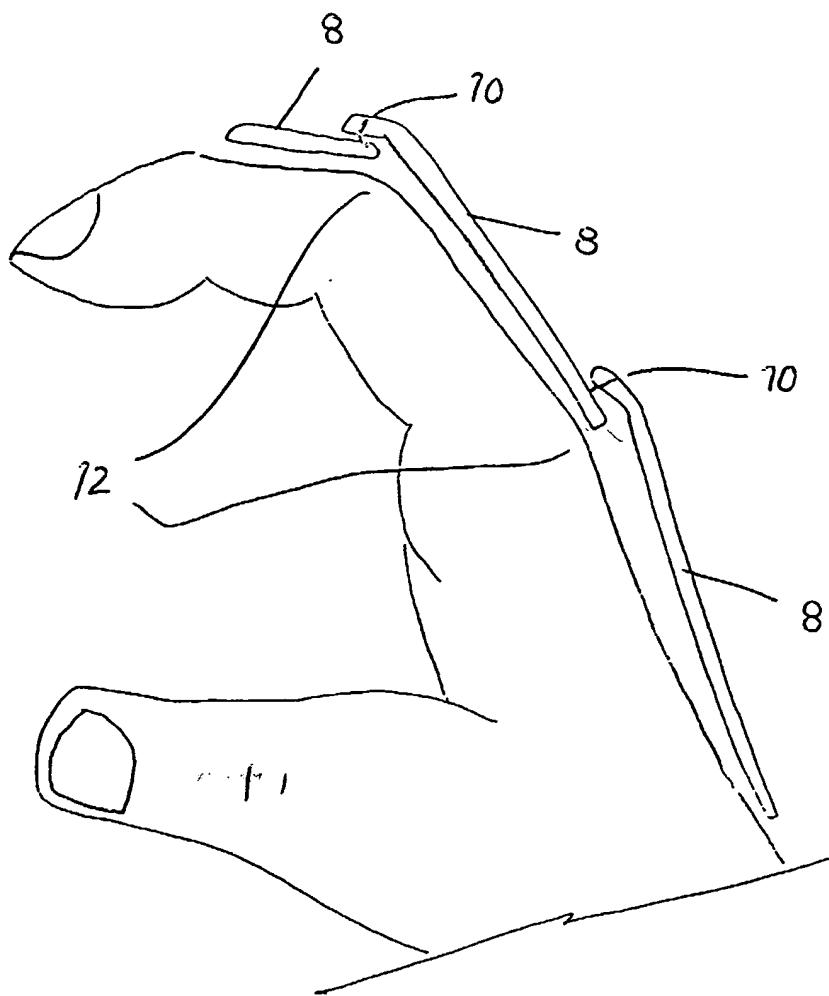
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FIGURE 1



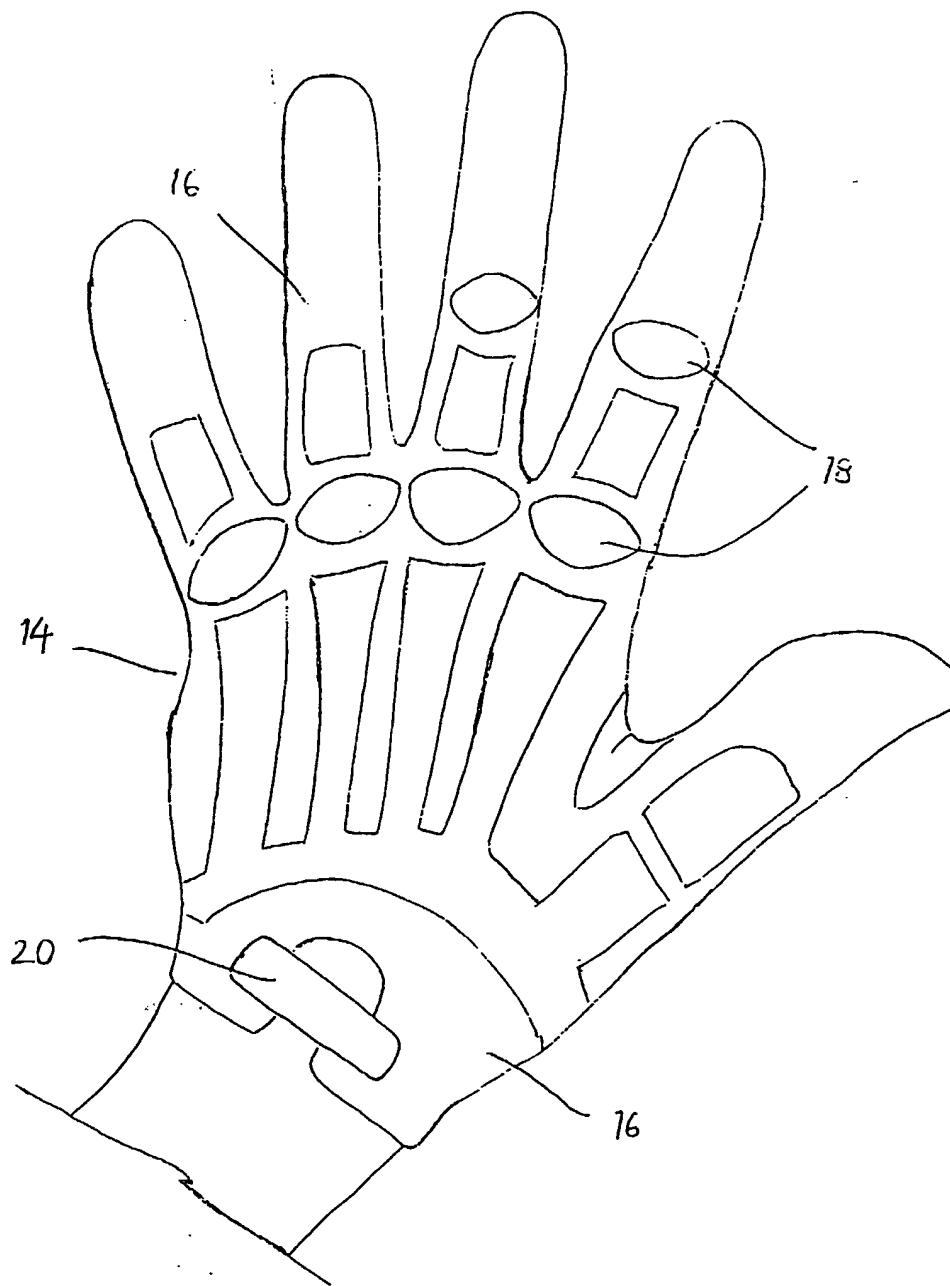
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FIGURE 2



3/3

FIGURE 3



## SPORTS GLOVE

The present invention relates to a glove for use in sports. In particular, the present invention relates to a protective sports glove for use in sports such as polo, baseball, hockey, cricket and other ball games.

Many sports involve the catching, deflecting and/or throwing of a ball, and/or the hitting of a ball directly or indirectly with a racquet or bat. Therefore, the hand or hands of a sportsperson can endure(s) accidental low to high energy impacts across the fingers and their joints (e.g. as a result of the impact of a ball) and injuries to the fingers and joints are not uncommon.

An object of the present invention is to provide a sports glove that absorbs the shock of accidental impact from a bat or ball and protects the bones and joints of the hands and fingers. It is another object of the invention to provide a protective sports glove that allows maximum flexibility to a hand and fingers when inserted into the glove so that the hand can perform normally.

Accordingly, in one aspect, the invention provides a sports glove having an articulated protective framework substantially following the shape and position of the bones of a user's hand.

Preferably, said framework comprises a plurality of support plates, said plates partially overlapping (e.g. hinged together or in some other way associated) over the user's finger joints.

The articulated framework is typically configured to provide extra protection and support for the more delicate and sensitive joint areas between hand to finger bones and finger to finger bones. Extra protective material (e.g. enhanced padding or material of enhanced thickness) may thus be provided at the most delicate and sensitive joint areas.

As the framework mimics both the shape and position of the bones and the flexibility of the joints of the hand, it is able to absorb the shock of sudden impacts from a stick, bat or ball and support the bones of the finger and palm, while retaining full flexibility so that the hand can maintain the dexterity required to play the sport.

Typically, the framework is bonded to a glove base.

Preferably, the glove base is made from a flexible material, for example, leather and/or plastics (e.g. Lycra ®) and/or fabric (e.g. Velcro ®).

Preferably, the support plates are made from a shock-resistant and/or impact-resistant material, for example, shock-resistant materials may include Neoprene ® and/or silicone and/or ethyl vinyl acetate, and impact-resistant materials may include Kevlar ® and/or Tedla ® and/or plastic laminates.

In one embodiment, the glove does not provide protection for a user's fingertips. This embodiment is particularly suitable for use in games in which the user grips a bat or racquet handle, and thereby wraps the tips of the fingers around the bat into a position in which they are non-accessible to accidental impact. Thus, the glove may be fingertip-less or the glove may have fingers, but the articulated protective framework does not extend to the fingertips. With many sports, the fingertips of a player are automatically protected when they are gripping a bat or racquet as they wrap underneath the base of the hand.

The glove may also comprise a wrist strap to enable a user to tighten the glove about the user's wrist.

The invention will now be described by way of example only by reference to the following diagrammatic drawings in which:

Figure 1 illustrates the framework of a glove in accordance with one aspect of the invention;

Figure 2 illustrates a side view of the framework of the glove illustrated in Figure 1, when a hand is in a partially clenched position; and

Figure 3 shows a glove comprising the framework shown in Figures 1 and 2 in accordance with an aspect of the invention.

Referring now to the figures, Figure 1 illustrates a framework 2 for use in the glove of the present invention. The shape and form of the framework 2 clearly follows the bones of a user's fingers 4 and palm 6. The framework is made up of a number of support plates 8 linked together by hinges 10. Each support member 8 is separate and overlaps with another support member in a fish-scale effect as shown in Figure 2. The overlapping sections lie directly above a finger and/or a knuckle joint 12. Thus, a glove comprising the framework is provided with extra support around the joint areas as well as maximum flexibility and motility. The support plates are made from sections of Kevlar ® in this example.

A complete glove 14 is shown in Figure 3. The Kevlar ® framework (not shown) is bonded to a Lycra ® glove base (not shown) and encased in a layered specialist material cover 16 made out of leather so that the glove can mimic flexion and joint action.

The glove 14 has further joint covers 18 and an elastic wrist strap 20 to facilitate application of the glove to the hand and retention thereon.

The complete glove is lightweight and its function is not compromised by the bulkiness or thickness of conventional hand protection.

It will be understood that the present disclosure is for the purpose of illustration only and the invention extends to modifications, variations and improvements thereto.

The application of which this description and claims form part may be used as a basis for priority in respect of any subsequent application. The claims of such subsequent application may be directed to any feature or combination of features described therein. They may take the form of product, method or use claims and may include, by way of example and without limitation, one or more of the following claims.

Claims:-

1. A sports glove having an articulated protective framework substantially following the shape and position of the bones of a user's hand.
2. A sports glove according to claim 1, wherein said framework comprises a plurality of support plates, said plates partially overlapping over the user's finger joints.
3. A glove according to either of claims 1 or 2 wherein the framework bonds to a glove base.
4. A glove according to claim 3 wherein the glove base is made from a flexible material.
5. A glove according to claim 4 wherein the glove base is made from leather and/or plastics and/or fabric.
6. A glove according to any one of claims 2 to 5 wherein the support plates are made from a shock-resistant and/or impact-resistant material.
7. A glove according to claim 5 wherein the support plates are made from Neoprene ® and/or silicone and/or ethyl vinyl acetate and/or Kevlar ® and/or Tedla ® and/or plastic laminates.
8. A glove according to any of one of claims 1 to 7 wherein the articulated protective framework does not extend to the fingertips of the glove.
9. A glove according to any one of claims 1 to 8 which is fingertip-less.

10. A glove according to any one of the preceding claims further comprising a wrist strap to tighten the glove about a user's wrist.

11. A glove substantially as described hereinabove and with reference to the accompanying drawings.



INVESTOR IN PEOPLE

Application No: GB 0119851.4  
Claims searched: 1-10

Examiner: Judith Dunstan  
Date of search: 6 November 2001

## Patents Act 1977

### Search Report under Section 17

#### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): A3V

Int Cl (Ed.7): A41D (19/015, 13/08, 31/00), A63B 71/14

Other: Online: EPODOC, JAPIO, WPI

#### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2311929 A (Dunlop Slazenger Group Limited) See fig 1, page 8 para. 2, page 3 para. 6, page 7 para. 5.	1, 3, 6-7
X	GB 2263621 A (Buchanan and Munyard) See fig 1 and page 2 lines 26-27 and page 7 lines 16-21	1, 2, 6, 8-9
X	US 4766612 (Patton, Sr.) See figs 12 and 18, col 2 lines 40-44, col 4 lines 3-7 and 28-34	1, 3-7
X	US 6253382 (Kleinert) See figs 3 and 5 and also col 5 lines 36-38 and 46-50	1, 6, 10
X	US 5911309 (Penney) See figs 2 and 4, col 2 lines 56-60 and col 4 lines 37-41	1, 3-6, 10
X	SU 1734666 (Makeevka) See figs 1-6	1,2 and 8
X	CH 686653 (Fernandez) See figs 1,3 and 4, col 3 lines 15-19, claim 4,	1-8
X	IE 940418 (Darcy and Cuddihy) See fig 2, page 1 lines 22-27, page 3 lines 23-25 and page 4 lines 10-12	1,3,6-10

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.